Telescope Alignment on the Blanco

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Objectives

- Measure misalignment effects

  – Measure relative displacement of prime focus with respect to the primary mirror

- Correct misalignment

  – Feed back displacement data to hexapod
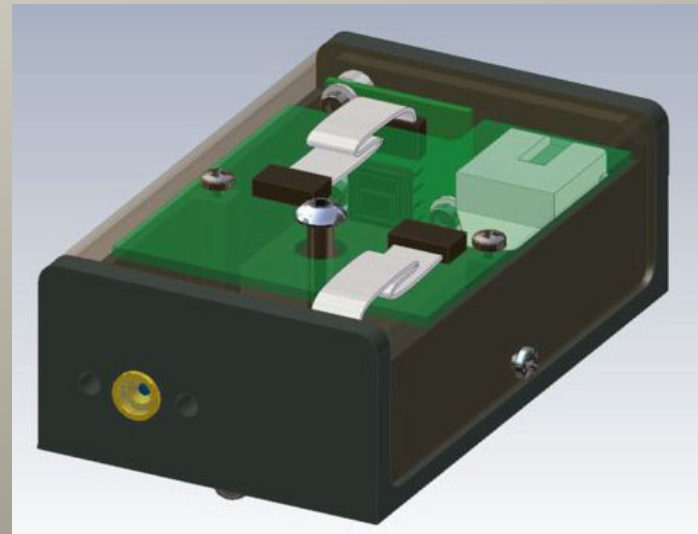
- Better data!

BCAMs

- Brandeis CCD Angle Monitors
- 2 red diode lasers, 1 CCD
- Field of view: angular cone 30mrad x 40mrad
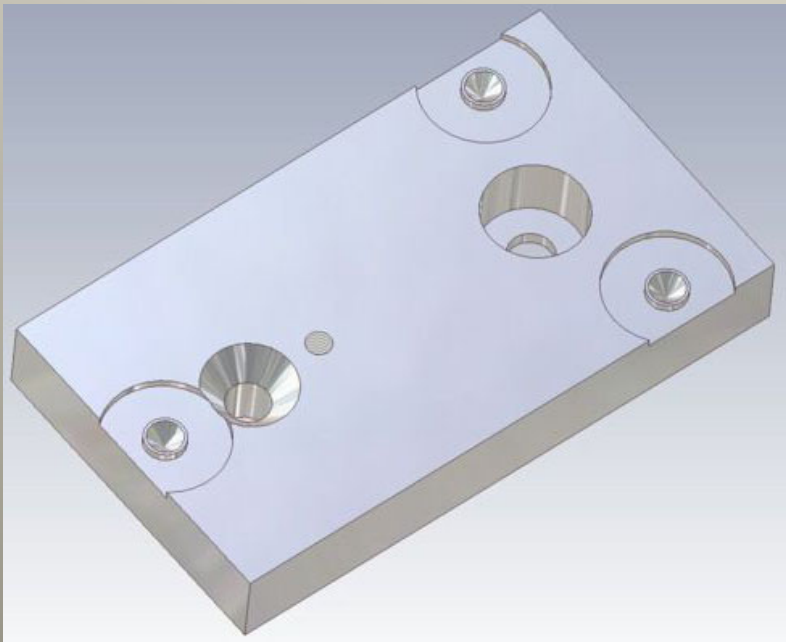- Relative accuracy: 5μrad

At 10m, this corresponds to:

    Field of view: 30 cm x 40 cm
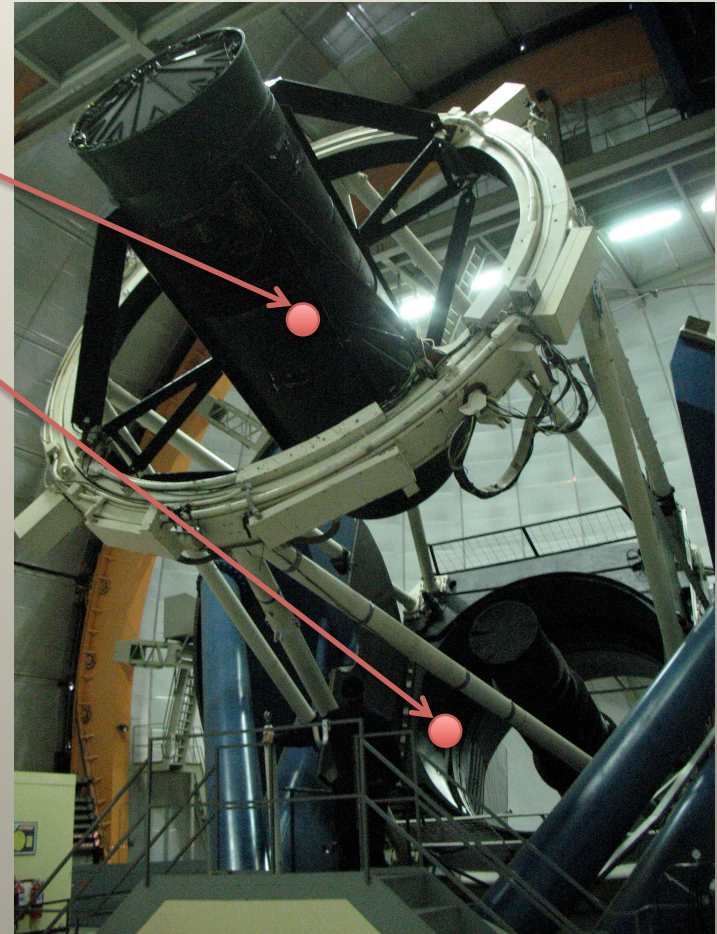
    Relative accuracy: 50μm

Mounting the BCAMs

- Kinematic mount
- Two angular degrees of freedom

Mounting the BCAMs

- BCAM #1: Outside of prime focus cage

- BCAM #2: Outside wall of primary mirror cell
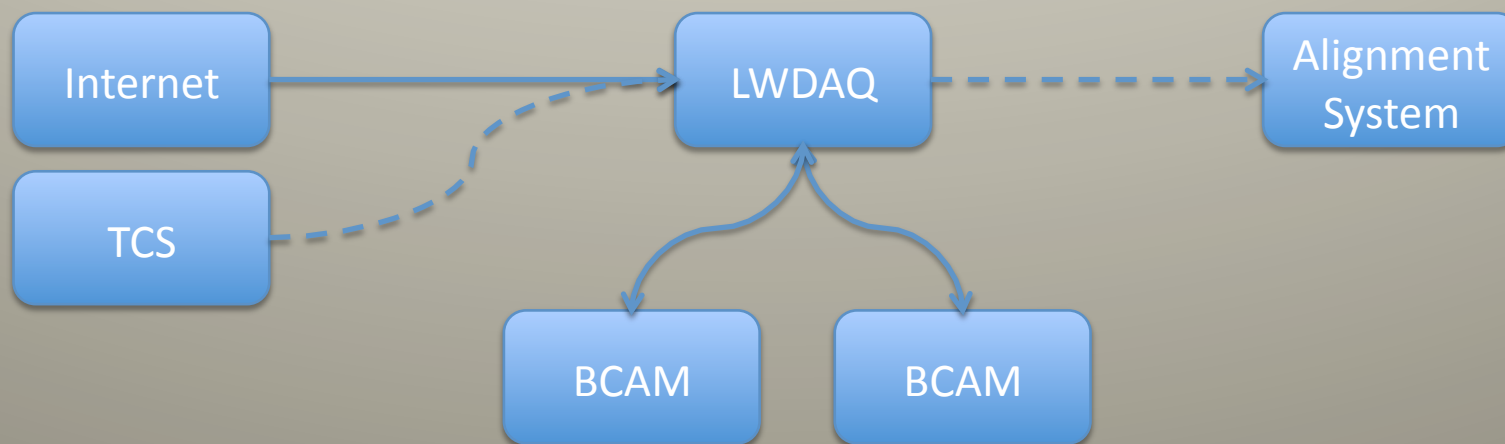
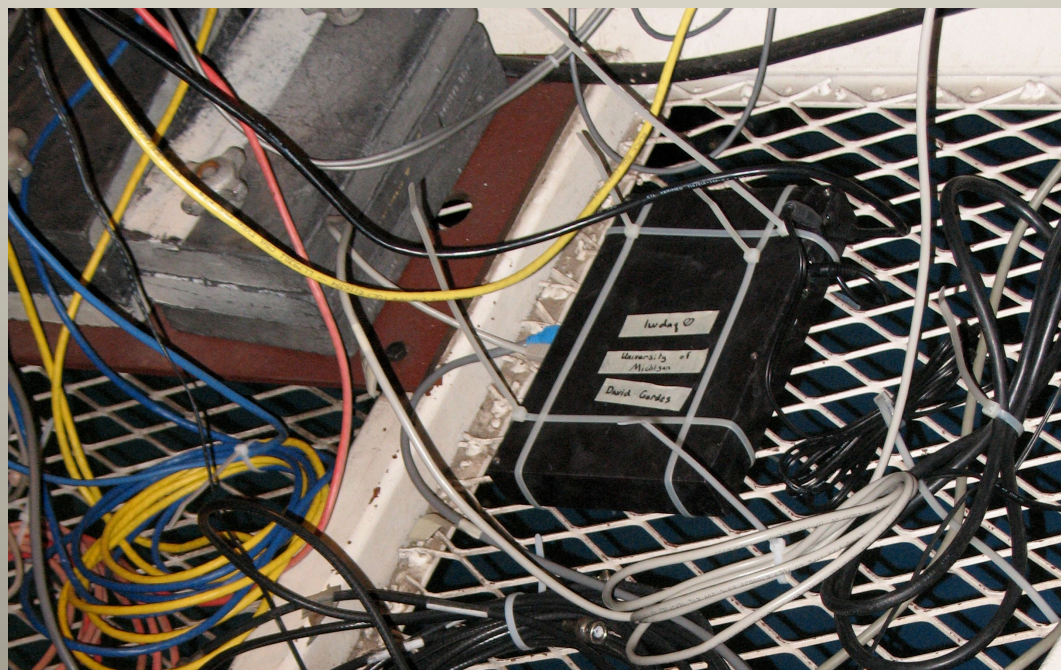# Mounting the BCAMs

BCAM #1

BCAM #2

DES Collaboration Meeting

Hardware/Software Control

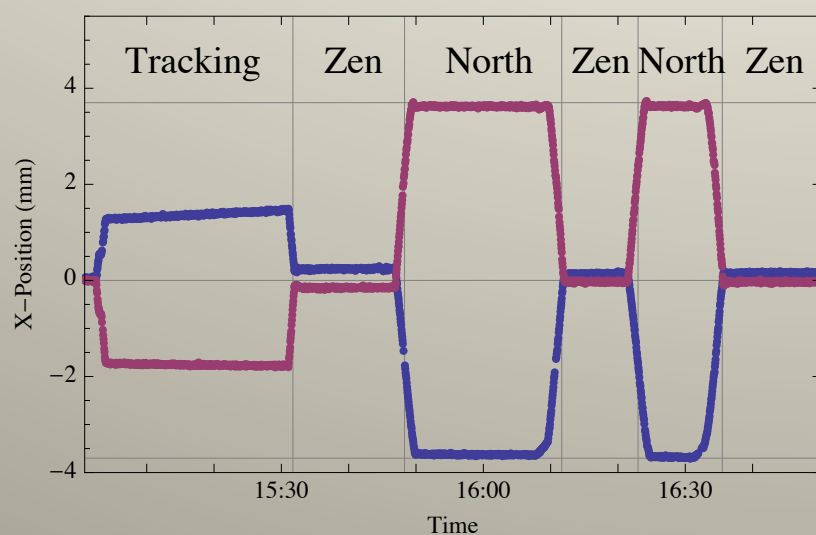- LWDAQ driver acts as a "hub" for BCAMs
- LWDAQ can be accessed over internet

LWDAQ Installation
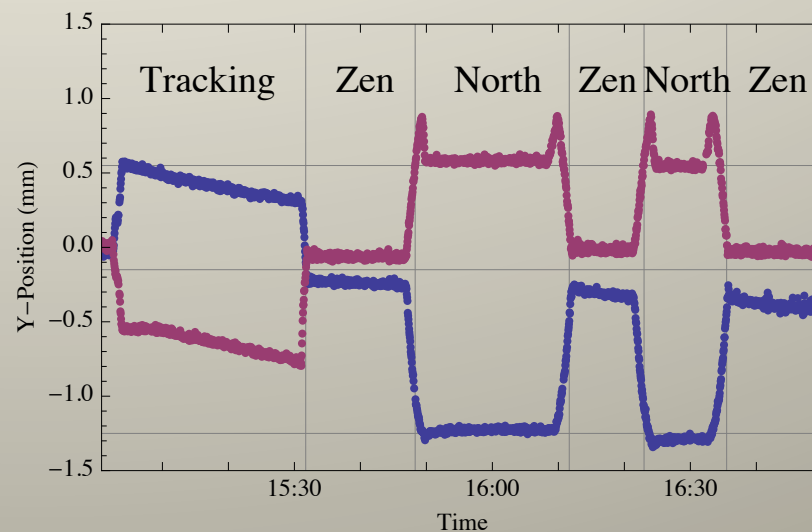
Located in Cassegrain cage

Preliminary Results

X-Positions (mm)

Y-Positions (mm)

Accuracy: ~5μm

Readout rate: 2 Hz

Note: tracking at 20°S

Conclusions & Future Work

- Misalignment/hysteresis effects clearly present

- BCAMs seem to be an excellent method for measuring these effects

- Better mounting points needed

- Integration into new TCS

- Hexapod feedback is feasible